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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/628,777      | 07/28/2003  | Takeshi Fujimoto     | 12852-017001        | 4507             |

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EXAMINER

PAK, SUNG H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                                 |  |
|------------------------------|-------------------------------|---------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/628,777 | Applicant(s)<br>FUJIMOTO ET AL. |  |
|                              | Examiner<br>Sung H. Pak       | Art Unit<br>2874                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0903</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Information Disclosure Statement***

Information disclosure statement filed 9/05/2003 has been considered by the examiner.

***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Dair et al (US 2002/0028048 A1).

Dair discloses an optical communications module with all the limitations set forth in the claims, including: one or more dielectric wiring boards ('106', '108' (PCBs) in Fig. 1); and a chassis ('119' in Fig. 1); said one or more dielectric wiring boards having an optical transmitter section, an optical receiver section, or an optical transceiver section provided thereon ('110'- optical transmitter, '111'- optical receiver in Fig. 1); the chassis encasing all of the dielectric wiring boards including the transmitter, receiver, or

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transceiver sections ('119' Fig. 1; paragraph 0078); wherein the chassis is a metal casing (paragraph 0077); wherein at least one of said dielectric wiring boards having a metal part formed on one side thereof ('114' and '118' in Fig. 1), said metal part constituting at least a part or whole of the outermost surface of the chassis (this metal part constitutes at least part of the outer most surface of the chassis, since they are coupled to the chassis- see paragraph 0079); wherein at least one dielectric wiring board having the metal part formed on one side thereof comprises a metal base substrate ('106 + 114' and '108 + 118' in Fig. 1); wherein said dielectric wiring boards are thermally connected together through the metal part of the chassis (paragraph 0079- since these wiring boards are connected together via the metal contact for grounding purposes, they are inherently connected "thermally" as well); wherein said dielectric wiring boards are thermally separated from each other (the wiring boards are thermally connected ONLY through the metal contact, therefore the boards themselves (without the metal part) are thermally separated); wherein said one or more dielectric wiring boards comprise multilayer wiring substrates and an exposed surface of a grounding layer thereof has a metal plate adhered thereto, said metal plate being in thermal contact with the metal part of the chassis ('106 + 114' and '108 + 118' in Fig. 1, paragraph 0079).

Claims 1, 5, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Yonemura et al (US 2001/0024551 A1).

Yonemura discloses an optical communications module with all the limitations set forth in the claims, including: one or more dielectric wiring boards ('218' and '222'

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(PCBs) in Fig. 12); said one or more dielectric wiring boards having an optical transceiver section ('214' or '212' in Fig. 12); the chassis encasing all of the dielectric wiring boards including the transceiver sections ('210' in Fig. 12); wherein the chassis is a metal casing (paragraph 0128); at least one of the dielectric wiring boards having a metal part (paragraph 0126- "218b and 222b can comprise a conductive layer substantially all over its surface") formed on one side thereof, said metal part constituting at least a part or whole of an outer most surface of the chassis (paragraph 0126, 0130- this metal part constitutes at least part of the outer most surface of the chassis, since they are coupled to the chassis see also Fig. 13 and 14); wherein the chassis has one or more vents ('210g' in Fig. 12); wherein the metal part formed on one side of the dielectric wiring board is partially removed ('218d' (the "holes") in Fig. 12), exposing terminals or other components of the optical transceiver section (paragraph 0126), through the removed portion to the outside of the optical communications module (the terminals are exposed to the outside of the optical communications module via pins '232a').

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dair et al (US 2002/0028048 A1) in view of Kim et al (US 6,729,771 B2).

Dair discloses an optical communications module with all the limitations set forth in the claims as discussed above, except it does not explicitly teach the use of heatsink coupled to the grounding layer of the wiring board.

However, the use of heatsinks coupled to optoelectronic wiring boards is known in the art as taught by Kim ('59' Fig. 6). The use of heatsink is considered advantageous and desirable in the art because it prevents overheating of optoelectronic devices and allow optical devices to operate in optimum efficiency. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Dair device to have heatsink coupled to the grounding layer of the wiring board.

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***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jiang et al (US 2002/0076173 A1) discloses optical communications module with dielectric wiring boards enclosed in a metal chassis.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353.

The examiner can normally be reached on Monday- Friday, 9AM-5PM.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sung H. Pak  
Examiner  
Art Unit 2874

sp